SHEET INDEX

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SYMBOL
BUFFER B
ELEMENT IDENT
A

TERM. MOD.	FUNCT.	TERM.	LOC
BACRO	I	018	3A2
BSHPU	I	019	2A9
C.BR1	I	013	3A1
C.STC1	I	012	2AS
OV.FILL1	I	115	2A8
FILLO	I	016	2A8
I16BC1	I	105	3A1
MRSTA1	I	01A	2AS
PPEHO	I	002	2A0
PPELO	I	102	2A0
SDØTO	I	118	3A0
ST.CLKO	I	101	2A6
STUFFO	I	107	2A0
SWB1	I	112	3A5
TG.SEQ1	I	104	2A2
UNLØADO	I	001	2A0
BCLK	Ø	116	2H7
BLK.CBR1	Ø	007	3HS
BØFLO	Ø	017	3H4
BRO	Ø	015	3H6
BUSYO	Ø	100	2H3
CLKA1	Ø	109	2H6
CLXITRO	Ø	003	2H3
LDPCKDO	Ø	010	2H1
ØFLCLK:	Ø	103	2H2
ØNLCLKO	Ø	113	3H3
ØNLCMPO	Ø	009	3H1
PE1	Ø	111	2H0
SOINO	Ø	117	3H0
SHIFT1	Ø	004	2H4
STFILLO	Ø	011	2H9
1ACTO	Ø	114	3H4
+5	P	000,119	3H6
GRD	G	200,319	3H7

RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE

SYSTEM USED ON	DESIGN CONTROL
COMMON SYSTEMS	IH

CURRENT DRAIN: 425mA

DWG ISSUE	EE OR CD ISSUED	DATE ISSUE		APPD
	—	10-9-74	LRE LRE	RWF MTS RFG
2B1	—	4-8-76	P/S LRE	JLT LEG RFG
3A1		2-11-77	AS LRE	WJZ LEG RFG
4A	—	4-6-77	AS LRE	WJZ LEG RFG

NOTES:

1. ⏚ GROUND RETURN

2. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS
VALUES PRECEDED BY THE SYMBOL +(PLUS) OR -(MINUS) ARE IN VOLTS

3. BATTERY AND GROUND TERMINALS FOR INTEGRATED CIRCUITS

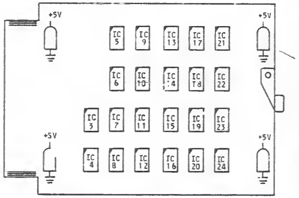
IC CODE	BAT. TERM.	GRD TERM.
41AD	16	8
41AE	16	7,8
41BP	16	8
41BR	16	7,8
41CA	16	8
41CB	16	8
41CC	16	8
41CJ	16	8
41EH	16	7,8
41U	16	8
41W	16	8

4 BATTERY AND GROUND TERMINALS FOR THIS CIRCUIT PACK ARE AS FOLLOWS:

FUNCTION	TERMINAL
+5	000,119
GRD	200,319

5. HORIZONTAL MOUNTING CENTERS AT 0.50 INCH.

6. INTEGRATED CIRCUIT LOCATION GUIDE:
(COMPONENT SIDE SHOWN)



UNMARKED COMPONENTS ARE FILTER CAPACITORS

SUPPORTING INFORMATION

CATEGORY	NO.
CIRCUIT PACK CODE	JK11
CONNECTOR ON FRAME	947C OR 947A
SERIES FOR LATEST CLASS A CHANGE. (ANY HIGHER SERIES IS ACCEPTABLE).	
ACCEPTABLE SERIES	3

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE FIRST SHEET.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE FIRST SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

NOTICE- NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT ~~UNDER WRITTEN~~ AGREEMENT.

ISSUE
4A

1N98

JK11 CIRCUIT PACK

BUFFER B
CIRCUIT

②

AT&TCO
STANDARD

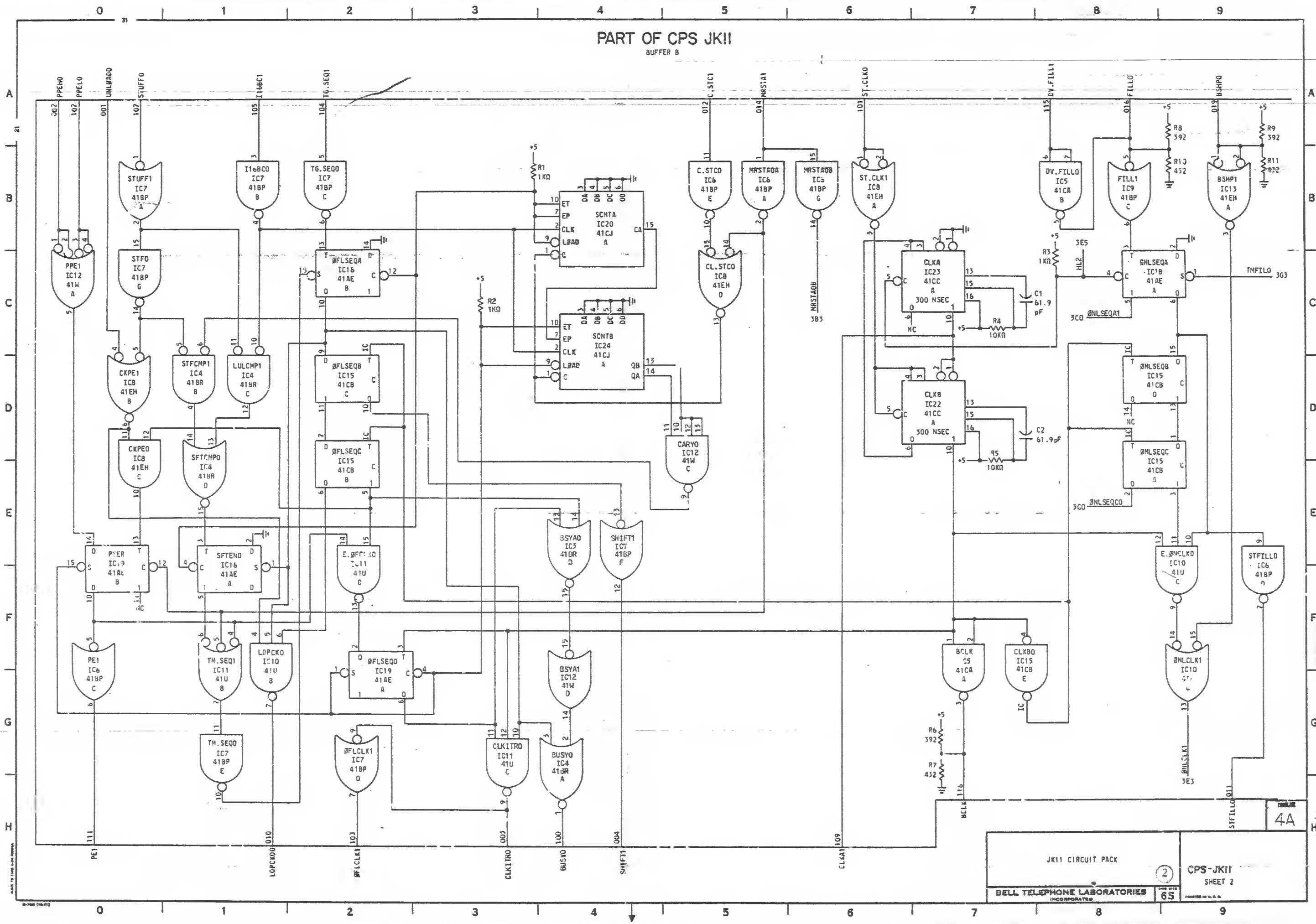
CPS-JKII
4 SHEETS

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PART OF CPS JKII

BUFFER B



JK11 CIRCUIT PACK

②

CPS-JK11
SHEET 2

BELL TELEPHONE LABORATORIES
INCORPORATED

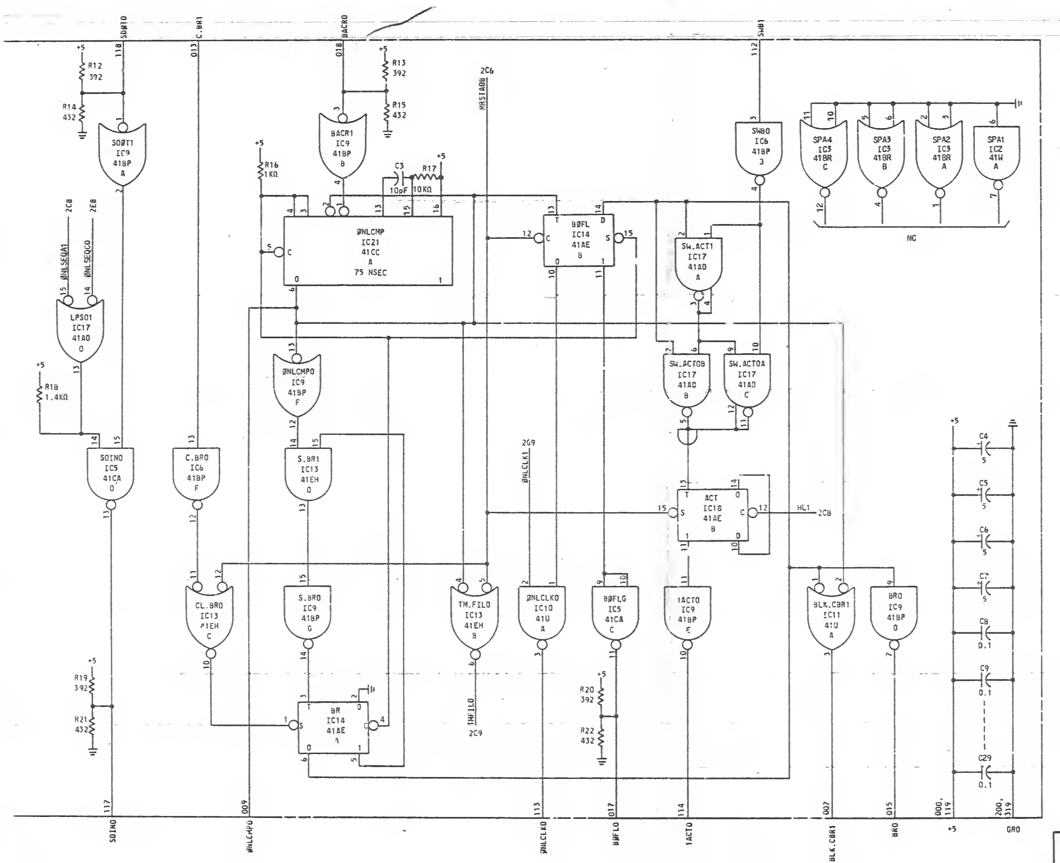
6S

ISSUE
4A

CPS-JK11

PART OF CPS JKII

BUFFER B



CPS-JKII

ISSUE 4A

JK11 CIRCUIT PACK

②

CPS-JKII
SHEET 3

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PART OF CPS JKII

BUFFER B

COMPONENT LIST

INTEGRATED CIRCUIT

LOC	IC3		IC4		IC5		IC6		IC7		IC8	
CODE	41BR		41BR		41CA		41BP		41BP		41EH	
ELEM ID	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC
A	SF2	3B6	BUSYO	2G4	BCLK	2F7	MRSTAOA	2B5	STUFF1	2B0	ST.CLK1	2B6
B	SP3	3B6	STFCMP1	2D1	DV.FILLO	2B8	SWBO	3B5	I168CO	2B1	CKPE1	2D0
C	SP4	3B5	LULCMP1	2D1	BØFLO	3F4	PE1	2F0	TG.SEQO	2B2	CKPEO	2D0
D	BSYAO	2E4	SFTCMPO	2D1	SOINO	3E0	STFILLO	2E9	ØFLCLK1	2G2	CL.STCO	2C5
E							C.STCO	2B5	TM.SEQO	2G1		
F							C.BRO	3E1	SHIFT1	2E4		
G							MRSTAOB	2B6	STFO	2C0		

LOC	IC9		IC10		IC11		IC12		IC13		IC14	
CODE	41BP		41U		41U		41W		41EH		41AE	
ELEM ID	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC
A	SDØT1	3B0	ØNLCLKO	3F3	BLK.CBR1	3F5	PPE1	2C0	BSHP1	2B9	BR	3G2
B	[illegible]	3B2	LDPCKD	2F1	TM.SEQ1	2F1	SP1	3B7	TM.FILO	3F3	BØFL	3C4
C	FILL1	2B8	E.ØNCLKO	2E9	CLKITRO	2G3	CARYO	2D5	CL.BRO	3F1		
D	BRO	3F6	ØNLCLK1	2F9	E.ØFCLKO	2E2	BSYA1	2F4	S.BR1	3E2		
E	IACTO	3F4										
F	ØNLCMPO	3D2										
G	S.BRO	3F2										

LOC	IC15		IC16		IC17		IC18		IC19	
CODE	41CB		41AE		41AD		41AE		41AE	
ELEM ID	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC
A	ØNLSEQC	2D9	SFTEND	2E1	SW.ACT1	3C5	ØNLSEQA	2C9	ØFLSEQD	2F2
B	ØFLSEQC	2D2	ØFLSEQA	2C2	SW.ACTOB	3D4	ACT	3E5	PTER	2E0
C	ØFLSEQB	2D2			SW.ACTOA	3D5				
D	ØNLSEQB	2D9			LPSO1	3D0				
E	CLKBO	2F7								
F										
G										

LOC	IC20		IC21		IC22		IC23		IC24	
CODE	41CJ		41CC		41CC		41CC		41CJ	
ELEM ID	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC	DESIG	SH LOC
A	SCNTA	2B4	ØNLCMP	3C2	CLKB	2D7	CLKA	2C7	SCNTB	2C4

CAPACITOR

	DESIG	CODE
[2]	C1,C2	KS-16958 L27, 61.5pF
	C3	KS-16958 L27, 10pF
[4]	C4-C7	601A, S
[22]	C8-C29	KS-1977A L5, 0.1

RESISTOR

	DESIG	CODE
[3]	R1-R3	KS-20616 L1A,1KΩ
[2]	R4,R5	,10KΩ
	R6	,392
	R7	,432
[2]	R8,R9	,392
[2]	R10,R11	,432
[2]	R12,R13	,392
[2]	R14,R15	,A32
	R16	,1KΩ
	R17	,10KΩ
	R18	,1.4KΩ
[2]	R19,R20	,392
[2]	R21,R22	KS-20616 L1A,A32

CIRCUIT DESCRIPTION

CIRCUIT PACK JK11 HANDLES BUFFER SEQUENCING. MONOPULSERS CLKA AND CLKB GENERATE A 600 ns (NOMINAL) SQUARE WAVE CLOCK PULSE TRAIN WHICH IS DISTRIBUTED TO BOTH THE ON-LINE AND OFF-LINE SEQUENCER CHAINS (ØNLSEQ, ØFLSEQ), AND ALSO DRIVES OFF THE BOARD ON BUFFER SERIAL BUS LEAD BCLK. THE CLOCK IS STOPPED WHILE ST.CLKO IS ACTIVE. NEGATION OF ST.CLKO RESTARTS THE CLOCK.

MOVEMENT OF DATA INTO OR OUT OF THE ON-LINE BUFFER IS CONTROLLED BY THE PERIPHERAL UNIT ENGAGING IT. THE ON-LINE CLOCK ØNLCLKO IS DERIVED FROM THE SHIFT PULSES APPEARING ON SERIAL BUFFER BUS LEAD BSHPO. ØNLCLKO IS INHIBITED IF AN OVERFLOW CONDITION EXISTS.

THE ON-LINE SEQUENCER OPERATES WHEN EITHER THE PERIPHERAL OR CC REQUESTS AN ON-LINE BUFFER FILL OPERATION BY CLEARING ØNLSEQA VIA LEAD FILLO OR DV.FILL1 RESPECTIVELY. ØNLSEQB AND ØNLSEQC ARE CONSECUTIVELY SET, THE LATTER ENABLING ØNLCLKO TO BE DRIVEN BY THE BUFFER CLOCK VIA GATE E.ØNCLKO. EITHER ØNLSEQA BEING CLEAR OR ØNLSEQC BEING SET ENABLES A RECIRCULATION PATH FROM BUFFER OUTPUT SDØTO BACK INTO INPUT SDINO DURING THE FILL OPERATION. AN ON-LINE SEQUENCE IS TERMINATED BY A PULSE ON TMFILO WHICH IS GENERATED BY ON-LINE OPERATION COMPLETE MONOPULSER ØNLCMP.

ØNLCMP IS TRIGGERED ON THE TRAILING EDGE OF THE ON-LINE BUFFER 1024-BIT CARRY BACRO. THE TRAILING EDGE OF THE ØNLCMP PULSE RAISES THE BR FLAG (BR F/F CLEARED) AND CLOCKS THE BØFL F/F. IF BR IS RAISED WHEN BØFL IS CLOCKED, AN OVERFLOW CONDITION IS INDICATED, BØFL IS SET, AND BØFLO IS ASSERTED.

THE ON-LINE/OFF-LINE STATUS OF THE TWO 1024-BIT BUFFERS ON JK13 IS GOVERNED BY THE STATE OF THE ACT F/F. THE TOGGLE INPUT TO ACT IS FORMED BY THE LOGICAL EXCLUSIVE ØR OF THE STATES OF SWB1 AND THE BR F/F OUTPUT. IF EITHER LEAD GOES HIGH, ACT TOGGLES AND THE BUFFERS SWITCH ON-LINE AND OFF-LINE STATUS.

CIRCUIT DESCRIPTION (CONT):

A PULSE ON TG.SEQO ACTIVATES THE OFF-LINE SEQUENCER CHAIN BY CLOCKING ØFLSEQA. ØFLSEQB AND ØFLSEQC PROVIDE DELAY IN THE SEQUENCE TO ALLOW SETTLING TIME FOR THE PARITY TREES ON JK12. PARALLEL PARITY ERRORS INDICATED BY THE STATES OF PPELO OR PPEHO CAUSE PTER TO BE SET BY ØFLSEQC DURING LOAD OPERATIONS. LDPCKDO DELAYS THE STATUS REPLY CHAIN ON JK10 TO INSURE THAT PARITY ERROR STATUS IS REPORTED TO THE CC BY THE SST IMMEDIATELY FOLLOWING THE LOAD OPERATION. A REGISTERED PARITY ERROR TERMINATES THE SEQUENCE BY SETTING ØFLSEQA. OTHERWISE, ØFLSEQD IS CLOCKED AND ENABLES OFF-LINE AND ITR CLOCKS ØFLCLK1 AND CLKITRO WHICH ARE THEN DRIVEN BY THE 600 ns PULSE TRAIN. OFF-LINE SEQUENCES GOVERNED BY THE LOAD OR UNLOAD STATES CAUSE THE SFTEND F/F TO BE CLOCKED ON THE TRAILING EDGE OF THE OFF-LINE BUFFER 16-BIT CARRY PULSE ON I168C1 TO TERMINATE THE SEQUENCE. STUFF OPERATIONS ARE TERMINATED BY THE TRAILING EDGE OF THE STUFF COUNTER CARRY PULSE. THE STUFF COUNTER DIVIDES BY 16 IN SCNTA AND BY 4 IN SCNTB IN ORDER TO COUNT THE APPEARANCE OF 64 PULSES ON I168C1.

AN ACTIVE LEVEL ON LEAD MRSTA1 INITIALIZES BOTH ON-LINE AND OFF-LINE SEQUENCERS AS WELL AS THE STUFF COUNTER AND THE BR, ACT, BØFL, AND PTER F/Fs.

ISSUE 4A

JK11 CIRCUIT PACK

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BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

CPS-JKII
SHEET 4

PRINTED IN U.S.A.

CPS-JKII